NATIONAL
SHAPE CUTTING MACHINES

IN a few minutes this National No. 612 cut eleven 3/16" plates into side members for fabricated Diesel engine beds. Let a National shape cutting machine reduce your fabricating costs too! A National representative will gladly talk over your cutting problems with you.

Send for this new folder **TODAY!**

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G-E Campus News

IT CUTS SOME ICE

NICODEMUS, the brown-nosed seal, playfully swam up to the North Pole, tripped the circuit-breaker and plunged Santa's workshop into darkness.

Absurd? Not as far as the successful operation of G-E outdoor air-break switches is concerned. These have been placed in a special room in the General Electric Research Laboratory at minus 20 degrees Fahrenheit, sprayed with water, and tested when coated with ice to a thickness of one and a half inches. The powerful leverages shattered the ice as easily as a walrus swallows a fish. In each case the switches opened and closed properly.

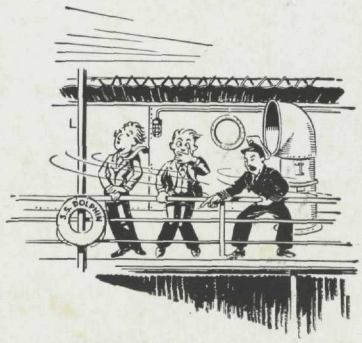
This test is just one of the many which G-E equipment must pass. And the observers, who check the operations with pitiless eye, are members of the G-E Test Course—young college men in their first year with the Company.

OH! MUMMY...!

A SKELETON in the closet—a white-robed ghost in the attic—even Ichabod Crane's headless horseman—may well feel jealous of Harwa, the Egyptian mummy. For while conservative ancestors content themselves with rolling in their graves in a genteel way, Harwa is floodlighted in a golden glow in full view of the public in the G-E building at the New York World's Fair.

This unusual exhibit is designed, not to frighten women and little children out of their wits but to demonstrate one of the many uses of x-rays. By pressing a button, an x-ray machine is turned on, and an image of Harwa's skeleton appears on a fluorescent screen which moves in front of the mummy. The principle employed is the same as that by which a doctor may fluoroscope a broken bone, except that the entire body of an adult person is viewed.

Harwa lived 2800 years ago, in Egypt. From inscriptions on the coffin lid it is learned that he was overseer of storage houses on the great farming estate of one of the temples of Amen, chief god of the empire. Pathological study of the mummy by means of x-ray indicates that Harwa was probably forty years old at the time of his death. And now, nearly 3000 years later, he is in his portable grave, a citizen of ancient Egypt in the World of Tomorrow.



FLOATING POWER

THE surging waves of a stormy sea are beautiful to an artist, disconcerting to a food-loving passenger, but just another problem to an engineer. Whenever a sleek, ocean liner plows her bow through a heaving swell, her engines feel an added load, and her captain wonders if the fuel will last. So, G-E engineers built an all-electric meter that will accurately measure the power put out by the propeller of any boat, from a tiny tug to a transatlantic greyhound.

The meter is essentially a combination of two electric generators mounted a little distance away from each other on the propeller shaft, and connected to instruments which can be located at any point on the ship. The generators are so mounted that at no load the voltages generated are exactly 180 degrees apart in phase and therefore add to zero.

When a load is placed on the revolving shaft, the torque causes a small angular twist in the shaft; consequently, the two generated voltages no longer add to zero. The resultant voltage is proportional to both the shaft twist and the propeller speed, and hence the meter can be made to read directly in horsepower. The installation can easily be modified to indicate total horsepower-hours and to write an automatic log of the power delivered during the trip.

Among the G-E engineers who developed the device are A. V. Mershon, Pratt Institute '13 and Union College '15, and C. I. Hall, U. of Illinois '10.